

MARK W. HITCHINS et. al.
Serial No.: 09/436,612

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AMENDMENTS TO THE CLAIMS:

The following listing of claims, in which claims 5-7 and 15-17 are currently amended, replaces all prior versions, and listings, of claims in the application:

1. (Previously Presented) A plunger for use in a syringe comprising a body portion having an inner wall, a discharge end and a transition region defined between the body portion and the discharge end, the plunger comprising:

a base comprising a side portion that is tapered so that the diameter of the side portion of the base decreases from a rearward axial position to a forward axial position thereof; and

a plunger surface disposed on at least a portion of the base, the plunger surface comprising a seal portion operably associated with the side portion of the base, the seal portion comprising an exterior surface in contact with the inner wall of the syringe and an inner wall that is tapered so that the diameter of the seal portion inner wall decreases from a rearward axial position to a forward axial position thereof,

wherein increases in pressure caused by movement of the plunger in the syringe compresses the seal portion between the inner wall of the syringe and the side portion of the base to create a dynamic seal between the seal portion and the inner wall of the syringe.

2.-4. (Cancelled)

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5. (Currently Amended) The plunger of Claim 1 wherein [the] an angle of taper of the side portion and an angle of taper of the seal portion are approximately equal.

6. (Currently Amended) The plunger of Claim 5 wherein the angle of taper of the side portion and the angle of taper of the seal portion are [[is]] in the range of approximately 3° to approximately 15°.

7. (Currently Amended) The plunger of Claim 6 wherein the angle of taper of the side portion and the angle of taper of the seal portion are [[is]] in the range of approximately 4° to approximately 10°.

8. (Original) The plunger of Claim 1 wherein the plunger surface further comprises a forward portion having a shape generally complementary to that of the transition region of the syringe.

9. (Original) The plunger of Claim 8 wherein the forward portion has a generally conical shape.

10. (Original) The plunger of Claim 8 wherein the forward portion has a generally hemispherical shape.

11. (Previously Presented) A syringe comprising:

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a body portion;

a discharge end;

a transition region defined between the body portion and the discharge end; and

a plunger movably disposed within at least the body portion, the plunger comprising a base comprising a side portion that is tapered so that the diameter of the side portion of the base decreases from a rearward axial position to a forward axial position thereof and a plunger surface disposed on at least a portion of the base, the plunger surface comprising a seal portion operably associated with the side portion of the base, the seal portion comprising an exterior surface in contact with the inner wall of the syringe and an inner wall that is tapered so that the diameter of the seal portion inner wall decreases from a rearward axial position to a forward axial position thereof;

wherein increases in pressure caused by movement of the plunger in the syringe compresses the seal portion between the inner wall of the syringe and the side portion of the base to create a dynamic seal between the seal portion and the inner wall of the syringe.

12. . . 14 (Canceled)

15. (Original) The syringe of Claim [[14]] 11 wherein [[the]] an angle of taper of the side portion and an angle of taper of the seal portion are approximately equal.

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16. (Currently Amended) The syringe of Claim 15 wherein the angle of taper of the side portion and the angle of taper of the seal portion are [[is]] in the range of approximately 3° to approximately 15°.

17. (Currently Amended) The syringe of Claim 16 wherein the angle of taper of the side portion and the angle of taper of the seal portion are [[is]] in the range of approximately 4° to approximately 10°.

18. (Original) The syringe of Claim 11 wherein the plunger surface further comprises a forward portion having a shape generally complementary to that of the transition region of the syringe.

19. (Original) The syringe of Claim 18 wherein the forward portion has a generally conical shape.

20. (Canceled)

21. (Previously Presented) The syringe of Claim 11 wherein the plunger surface further comprises a protruding member at a forward end thereof, the protruding member being adapted to enter the discharge end of the syringe when the plunger is advanced to expel liquid therefrom.